

Amendments to the Claims:

1. (Currently amended) A process of producing a protein of interest in an F1 seed said process comprising:

(a) hybridizing a first and a second transgenic parental plant, whereby an F1 seed is produced, wherein said first transgenic parental plant has integrated in its genome a precursor of a replicating DNA as a first partial genetic endowment, said replicating DNA encoding said protein of interest and comprising a plant geminiviral origin of replication and a nucleic acid sequence encoding a plant geminiviral replicase, said second transgenic parental plant encodes, as a second partial genetic endowment, a site-specific recombinase, integrase or flippase for generating said replicating DNA by rearranging the precursor of said replicating DNA by site-specific recombination, and said hybridizing generates in said F1 seed said replicating DNA by combining in said F1 seed said first and said second partial genetic endowments of said first and said second transgenic parental plant; and

(b) isolating from said F1 seed or a seedling thereof,  
(i) said protein of interest, or  
(ii) if said protein of interest is an enzyme, a chemical compound the synthesis of which said enzyme is involved in.

2. (Currently amended) A process of producing a protein of interest in an F1 seed said process comprising:

(a) hybridizing a first and a second transgenic parental plant, whereby an F1 seed is produced, wherein said first transgenic parental plant has integrated in its genome a precursor of a replicating DNA as a first partial genetic endowment, said replicating DNA encoding said protein of interest and comprising a plant geminiviral origin of replication and a nucleic acid sequence encoding a plant geminiviral replicase, said second transgenic parental plant encodes, as a second partial genetic endowment, a site-specific recombinase, integrase or flippase for generating said replicating DNA by rearranging the precursor of said replicating DNA by site-specific recombination, and said hybridizing generates in said F1 seed said

replicating DNA by combining in said F1 seed said first and said second partial genetic endowments of said first and said second transgenic parental plant, whereby said protein product of interest is not expressed in said first or said second parental plant; and

- (b) isolating from said F1 seed or a seedling thereof,
  - (i) said protein of interest, or
  - (ii) if said protein of interest is an enzyme, a chemical compound the synthesis of which said enzyme is involved in.

3-11. (Cancelled)

12. (Previously presented) The process according to claim 1, wherein said replicating DNA is generated by combining in said F1 seed a site-specific recombinase from a first parental plant and a precursor of said replicating DNA from a second parental plant.

13. (Previously presented) The process according to claim 1, wherein said replicating DNA is an autonomous plasmid.

14-17. (Cancelled)

18. (Currently amended) The process according to claim 1, wherein transcription of RNA or proteins necessary for formation of said replicating DNA ~~or RNA~~ is controlled by a constitutive promoter, seed-specific promoter, or chemically regulated promoter.

19-29. (Cancelled)

30. (Currently amended) The process according to claim 1, wherein said protein product of interest accumulates in the developing embryo, in the endosperm, in cotyledons or in germinating seeds.

Appl. No.: 10/559,430  
Amdt. dated September 4, 2009  
Reply to Office Action of March 12, 2009

31. (Previously presented) The process according to claim 1, wherein said plants are monocots or dicots.

32. (Previously presented) The process according to claim 1, wherein the female parental plant of said hybridization is male-sterile.

33. (Previously presented) The process according to claim 1, wherein said protein of interest is encoded in the partial genetic endowment provided by the female parental plant of said hybridization.

34. (Currently amended) The process according to claim 1, wherein production of said protein product of interest in said seed is triggered by said generation of said genetic endowment.

35-37. (Cancelled)